

Multi-layer Far-Infrared Component Technology, Phase I

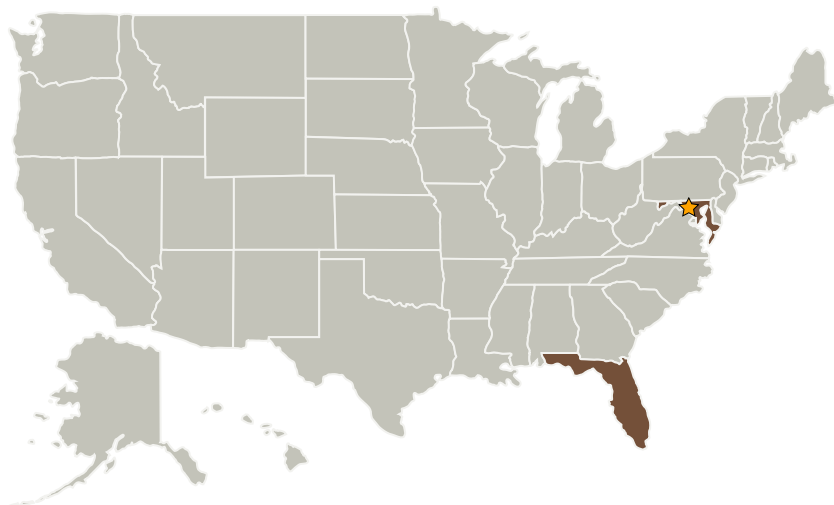
Completed Technology Project (2009 - 2009)



Project Introduction

This Phase I SBIR will demonstrate the feasibility of a process to create multi-layer thin-film optics for the far-infrared/sub-millimeter wave spectral region. The process will create alternating sub-wavelength layers of window and air with high index contrast. The process proven in Phase I will be applied to Phase II commercial prototypes including mirrors with reflectivity exceeding 99.99%, design tunable band-pass and band-blocking filters, anti-reflection optics, and scanning Fabry-Perot spectrometers with simultaneous unprecedented high resolution and broad free spectral range at 100 micron wavelengths. Such spectroscopic component technology can be immediately integrated into a number of future NASA missions in Earth and planetary science, astronomy, and astrophysics, as well as having dual use and large potential markets in defense, security, and biomedicine.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Zyberwear, Inc.	Supporting Organization	Industry	Ocoee, Florida



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Florida

Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
 - └ TX12.4 Manufacturing
 - └ TX12.4.3 Electronics and Optics Manufacturing Process